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MITIGATING THE ENVIRONMENTAL IMPACTS OF ANIMAL PRODUCTION ON CLIMATE CHANGE – CHALLENGES AND OPPURTINITIES IN THE TROPICS

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Production of meat and milk is not only resource intensive, but incur significant environmental cost as well. Even though ruminants are capable of converting poor quality feeds to high quality proteins for human consumption, the rumen and enteric digestion is responsible for 15-20 % of total green house gas emissions on the planet. This is inevitable as one of the major green house gas, methane, is released during microbial-assisted digestion in the gastro-intestinal tract. In fact, calculation has shown that every 1 % increase in Malaysia's beef self sufficiency would have resulted in the increase of 2.6 million tonnes of methane emission annually. As a matter of fact, producing a kilogram of beef would result in the emission of 1.5 kg of methane, 1 kg of mutton produces 0.75 kg of methane, while a kilogram of pork and poultry resulted in 0.27 kg and 0.20 kg of methane, respectively. It is known that a cow produces between 70-120 kg methane a year, or equivalent to about 2300 kg CO2 in terms of heat trapping ability. This is equivalent to output from a car driven for 15000 km/year. In view of the significant environmental impact of animal production, it is crucial to balance the public's continual access to affordable animal proteins, with the environmental sustainability of animal agriculture. The current article examined the options available to animal productionists in the tropics, especially with regards to the ability of plant polyphenols in reducing methane emissions in livestock. The current work also looked at how climate change affects the re-distribution of land, water and other resources available for animal agriculture. This is inevitable as land areas traditionally associated with food production in North America, Asia and South America are expected to experience warmer temperatures, as well as harsher and dryer climate that may no longer conducive for growing plants and raising animals. It is hoped that this article would lead to a re-think on the best and sustainable way to produce animal protein, while minimising environmental impacts of animal agriculture for our future generations.